# Applied Physics B Lasers and Optics

# Volume B 59 1994

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# PHYSICS AND ASTRONOMY CLASSIFICATION SCHEME (PACS)

### Shortened version for use in classifying papers for Applied Physics

Mathematical methods in physics

Measurement science and metrology

Specific instrumentation

07.60 Optical instruments and techniques, detection of radiation

07.65 Optical spectroscopy and spectrometers 07.75 Mass spectrometers and mass-spectroscopy techniques

07.80 Electron and ion microscopes and spectrometers; techniques

07.85 X-ray and gamma-ray instruments and techniques

### Atomic and molecular physics

Atomic spectra and interactions with photons

Molecular spectra and interactions of molecules with photons

Atomic and molecular collision processes and interactions Experimentally derived information on atoms and

molecule Studies of special atoms and molecules (macro- and polymer molecules, clusters)

### Fundamental areas of phenomenology (including applications)

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Optics (see also 78)

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42.20 Propagation and transmission in inhomogeneous media

42.30 Optical information, image formation and analysis

42.40 Holography

42.50 Quantum optics

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G Excimer lasers

H Atomic, ionic, and other gas lasers

M Laser action in liquids and organic dyes

Laser action in semiconductors

R Laser action in solid-state lasers

T Free-electron lasers

42.60 Laser systems and laser-beam applications

B Design of specific laser systems

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### **Photophysics and Laser Chemistry**

Antonyuk B.P., Bertolotti M., Kiselev S.A., Liakhou G.L., Popescu A.A., Sibilia C.

A photothermal experiment interpreted as evidence of electron-hole self-ordering in As-S chalcogenide glasses.

Appl. Phys. B 59/6, 639-643 (1994) PACS: 78.66 71.55 42.60

Bangar Raju B., Varadarajan T.S.:

Photophysical properties and laser characteristics of a new rigid aminocoumarin dye lasing in the blue-green region.

Appl. Phys. B 59/1, 83-86 (1994) PACS: 42.55M 82.50 Behrens H.-O., Dembczynski J., Färber M., Gutöhrlein G.H.,

Harnisch M., Helmrich G., Kajoch A., Krzykowski A.:

Laser-induced fluorescence line narrowing in cobalt I.

Appl. Phys. B 59/3, 299-306 (1994) PACS: 32.30J 32.50 35.10

Beléndez A., Pascual I., Fuentes R., Fimia A.:

Calculation of shear angles in holographic gratings recorded in bleached silver-halide emulsions.

Appl. Phys. B 59/5, 553-561 (1994) PACS: 42.40D 42.40

Beverini N., Genovesi G.L., Maccioni E., Messina A.M., Strumia F.: Near-UV sub-Doppler spectroscopy on a metastable Mg beam by a frequency-doubled diode laser.

Appl. Phys. B 59/3, 321-326 (1994) PACS: 42.65 32.00

Boquillon J.P., Musset O.:

Flashlamp-pumped Ti:Sapphire laser: Influence of the rod figure of merit and  ${\rm Ti}^{3+}$  concentration.

Appl. Phys. B 59/3, 357-360 (1994) PACS: 42.55R

Brown T.M., Pitz R.W., Hess C.F., Wood C.P.:

Pulsed photothermal laser deflection for low-level smoke and NO<sub>2</sub> measurements in engine exhausts.

Appl. Phys. B 59/3, 351-356 (1994) PACS: 07.60 82.40

Causo M.S., Martino M., Nassisi V.:

Photoelectron-beam generation up to short threshold. Appl. Phys. B 59/1, 19-24 (1994) PACS: 79.60 42.55 Chardonnet Ch., Guernet F., Charton G., Bordé Ch.J.:

Ultrahigh-resolution saturation spectroscopy using slow molecules in an external cell.

Appl. Phys. B **59**/3, 333-343 (1994) PACS: 33.80 42.62 Cheskis S., Kovalenko S.A.:

Detection of atomic oxygen in flames by absorption spectroscopy.

Appl. Phys. B **59**/5, 543-546 (1994) PACS: 32.20 42.55 82.80 Colonna G., Longo S., Esposito F., Capitelli M.:

Fourier-transform sensitivity analysis. Application to XeCl self-sustained discharge-laser kinetics.

Appl. Phys. B 59/1, 61-72 (1994) PACS: 42.55G 02.00 82.20

Courteille Ph., Ma L.S., Neuhauser W., Blatt R.:

Frequency measurement of <sup>130</sup>Te<sub>2</sub> resonances near 467 nm. Appl. Phys. B **59**/2, 187-193 (1994) PACS: 07.65E 33.80 42.50 Dämmig M., Mitschke F.:

Velocity of pulse propagation in media with amplitude nonlinearity. Appl. Phys. B 59/3, 345-349 (1994) PACS: 42.25B 42.65

Dias Tavares Jr. A., Borges A.M., Fellows C.E., Massone C.A.:
Additives as ionizing elements in N<sub>2</sub> TE UV lasers.
Appl. Phys. B 59/6, 645-648 (1994) PACS: 42.60

Dimarcq N., Giordano V., Cerez P.:

Statistical properties of laser-induced fluorescence signals. Appl. Phys. B 59/2, 135-145 (1994) PACS: 32.80 32.50 Domiaty U., Gruber D., Windholz L., Dinev S.G., Allegrini M.,

Filippo G. De, Fuso F., Rinkleff R.-H.:

Nonlinear emission in sodium vapour upon pulsed-laser excitation of the 4<sup>2</sup>P levels.

Appl. Phys. B 59/5, 525-531 (1994) PACS: 42.50F 42.55 42.65

Drewsen M., Laurent Ph., Nadir A., Santarelli G., Clairon A., Castin Y., Grison D., Salomon C.:

An investigation of sub-Doppler cooling effects in a cesium magnetooptical trap.

Appl. Phys. B 59/3, 283-298 (1994) PACS: 32.80P

Drnoian V.E., Galstyan T.V., Arakelian S.M.:

Stochastic processes in a nonlinear Kerr-like ordered liquid. Light-induced multidimensional structures and instabilities.

Appl. Phys. B 59/6, 565-571 (1994) PACS: 61.30G 42.65 64.70

Dubetsky B., Berman P.R.:

Magnetic-grating free-induction decay and magnetic-grating echo using ultrafast excitation pulses.

Appl. Phys. B 59/2, 147-157 (1994) PACS: 42.50M 42.65 32.00

Edwards C.S., Gill P., Klein H.A., Levick A.P., Rowley W.R.C.:

Laser-cooling effects in few-ion clouds of Yb<sup>+</sup>. Appl. Phys. B 59/2, 179-185 (1994) PACS: 32.80P

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Laser ablation of aqueous solutions with spatially homogeneous and heterogeneous absorption.

Appl. Phys. B 59/1, 73-81 (1994) PACS: 79.20D 83.70

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Anisotropy of the nonlinear optical susceptibility  $\chi^{(3)}$  in polydiacetylene single crystals.

Appl. Phys. B 59/2, 203-209 (1994) PACS: 42.65

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Laser-frequency stabilization using forward scattering.

Appl. Phys. B 59/6, 631-633 (1994) PACS: 42.60B 78.20

George T., Saupe S., Wappelhorst M.H., Urban W.:

The CO fundamental-band laser as secondary frequency standard at 5  $\mu m$ .

Appl. Phys. B 59/2, 159-166 (1994) PACS: 33.20 07.65 42.72

Gilbert B.D., Parmenter C.S., Su M.-C., Oh H.-K., Zhao Z.-Q.:

Vibrational predissociation dynamics and internal rotation in aromatic van der Waals complexes.

Appl. Phys. B 59/4, 397-402 (1994) PACS: 34.00 36.00 82.40 Grieser R., Klein R., Huber G., Dickopf S., Klaft I., Knobloch P.,

Merz P., Albrecht F., Grieser M., Habs D., Schwalm D., Kühl T.:

A test of special relativity with stored lithium ions.

Appl. Phys. B **59**/2, 127-133 (1994) PACS: 03.30 29.20 42.50 He Q.B., Liu H.K., Yeh P.:

Asymmetric photorefractive Fabry-Perot etalons.

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Appl. Phys. B 59/3, 307-310 (1994) PACS: 33.20N 62.65

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bium-laser radiation. Appl. Phys. B 59/6, 621-629 (1994) PACS: 61.80B 79.20 87.50 Jermann F., Buse K.:

Light-induced thermal gratings in LiNbO3:Fe.

Appl. Phys. B 59/4, 437-443 (1994) PACS: 65.90 72.20 78.20

Jordan C., Stankov K.A., Marowsky G., Canto-Said E.J.:

Efficient compression of femtosecond pulses by stimulated Raman scattering.

Appl. Phys. B 59/4, 471-473 (1994) PACS: 42.65R

Khoo I.C., Li H .:

Nonlinear optical propagation and self-limiting effect in liquid-crystalline fibers.

Appl. Phys. B 59/6, 573-580 (1994) PACS: 42.81 42.70 42.65

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High-resolution spectroscopy with laser-cooled and trapped calcium atoms.

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Analysis of dynamic pattern formation in nonlinear Fabry-Perot resonators.

Appl. Phys. B 59/6, 581-589 (1994) PACS: 61.30 42.50 42.65

Krichbaumer W., Werner Ch.:

Current state-of-the-art of LIDAR inversion methods for atmospheres of arbitrary optical density.

Appl. Phys. B 59/5, 517-523 (1994) PACS: 42.68G 42.68 94.10 Kullmer R .:

Gas-phase photolysis of tungsten hexachloride.

Appl. Phys. B 59/1, 25-36 (1994) PACS: 82.50 33.80 81.15

Kuprionis Z., Svedas V

Superradiating 4P-4S-3P cascade of sodium vapour arising on the leading edge of the exciting laser pulse.

Appl. Phys. B 59/6, 649-653 (1994) PACS: 32.50 42.50

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Diode end-pumped high-efficiency Nd:YAG laser.

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Mechanism transition of self-pumped phase conjugation in

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Two-step degenerate four-wave mixing as a means to decrease pre- and post-filtering effects in optically thick media.

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Generation of 200 femtosecond pulses tunable between 2.5 and 5.5 µm. Appl. Phys. B 59/2, 211-213 (1994) PACS: 42.65K 42.65

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VUV spectroscopy of magnetically trapped atomic hydrogen. Appl. Phys. B 59/3, 311-319 (1994) PACS: 67.65 32.80 07.65

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Solvent/solute interactions probed by picosecond transient Raman spectroscopy: S<sub>1</sub> 1,4-diphenyl-1,3-butadiene in the linear alkanes Appl. Phys. B 59/4, 389-395 (1994) PACS: 33.20F 82.30 82.40

Moskovets E.V., Letokhov V.S.:

Cat's-eye reflectron.

Appl. Phys. B 59/5, 547-552 (1994) PACS: 82.80M

Newzella A., Stolle R., Stiens T.:

Voltage sensitivity of the optical nonlinearity in nematic liquid-crystal

Appl. Phys. B 59/6, 597-600 (1994) PACS: 42.65 61.30

Nyholm K., Fritzon R., Aldén M.:

Single-pulse two-dimensional temperature imaging in flames by degenerate four-wave mixing and polarization spectroscopy.

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Tsunemi A., Tashiro H., Takeuchi K.:

Cross section of supercooled 238 UF, in multiphoton absorption induced by 16 micrometer Raman-laser radiation.

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Laser-excited nonlinear properties of BaF2 and its application in a single-shot spatially insensitive autocorrelator.

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Appl. Phys. B 59/2, 123-126 (1994) PACS: 32.60 35.80 42.62

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Calibration of OH laser-induced fluorescence temperature measurements using thermally dissociated H2O.

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Generation of cylindrically symmetric magnetic fields with permanent magnets and μ-metal.

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Time-resolved resonance-Raman study of porphyrins and metalloporphyrins in the electronic excited states.

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Nonlinear optical ferroelectric liquid crystals and device configurations. Appl. Phys. B 59/6, 607-615 (1994) PACS: 61.30 42.80 42.65 42.82

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Interferometric coherent Raman spectroscopy with incoherent light: Some applications.

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Schatz W., Renk K.F., Fusina L., Izatt J.R.:

Far-infrared laser-emission spectroscopy of ammonia isotopomers.

Appl. Phys. B 59/4, 453-465 (1994) PACS: 42.55L 42.65

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Cesium saturation spectroscopy revisited: How to reverse peaks and observe narrow resonances.

Appl. Phys. B 59/2, 167-178 (1994) PACS: 32.80B 42.65

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Optical Ramsey spectroscopy on laser-trapped and thermal Mg atoms. Appl. Phys. B 59/2, 99-115 (1994) PACS: 07.65 32.80 42.50

Simeonsson J.B., Miziolek A.W.:

Spectroscopic studies of laser-produced plasmas formed in CO and CO2 using 193, 266, 355, 532 and 1064 nm laser radiation

Appl. Phys. B 59/1, 1-9 (1994) PACS: 52.25Q 52.25 52.50 Slekys G., Staliunas K., Tarroja M.F.H., Weiss C.O.:

Cooperative frequency locking and tristability in a class-B laser.

Appl. Phys. B 59/1, 11-17 (1994) PACS: 42,60J 42,65 61,70 Takahashi H., Werncke W., Pfeiffer M., Lau A., Johr T.:

Structural changes in excited states and photoisomers determined by time-resolved Raman scattering.
Appl. Phys. B 59/4, 403-414 (1994) PACS: 33.20F 42.65

Taylor R.S., Leopold K.E.:

Magnetic-spiker excitation of gas-discharge lasers.

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Broadband (1000 cm<sup>-1</sup>) multiplex CARS spectroscopy: Application to polarization sensitive and time-resolved measurements

Appl. Phys. B 59/4, 369-375 (1994) PACS: 42.65D 82.80 78.47

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Real-time measurement and control of particle-number density and size of the detonation products of lead azide.

Appl. Phys. B 59/1, 45-52 (1994) PACS: 42.25B 47.40

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Laser-induced incandescence: Development and characterization towards a measurement of soot-volume fraction.

Appl. Phys. B 59/4, 445-452 (1994) PACS: 42.62H 78.20 82.40

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Appl. Phys. B 59/3, 217-256 (1994) PACS: 32.00 35.00 42.50

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High-resolution microwave spectroscopy on trapped ion clouds.

Appl. Phys. B 59/3, 257-263 (1994) PACS: 32.80P 32.30 Zhu Y.M., Chen H., Wei Y., Yan W.:

Liquid-crystal alignment of phthalocyanine-derived Langmuir-Blodgett films.

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Ziorov A.S., Fox R.W., Ellingsen R., Weimer C.S., Velichansky V.L., Tino G.M., Hollberg L.:
High-resolution diode-laser spectroscopy of calcium.
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Zimmer K., Stenner J., Kluge H.-J., Lantzsch J., Monz L., Otten E.W.,

Passler G., Schwalbach R., Schwarz M., Stevens H., Wendt K., Herrmann G., Niess S., Trautmann N., Walter K., Bushaw B.A.: Determination of <sup>90</sup>Sr in environmental samples with resonance ionization spectroscopy in collinear geometry.

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